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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------|-----------------------------|------------------|
| 09/864,817 | 05/24/2001 | Stephen A. Constantino | 97046CIPDIV (C0698/7138) | 3443 |

7590 12/04/2001
Martha Ann Finnegan
Cabot Corporation
157 Concord Road
Billerica, MA 01821

EXAMINER

BLANTON, REBECCA A

ART UNIT PAPER NUMBER

1762

DATE MAILED: 12/04/2001

#4

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-4

Office Action Summary

Application No.

09/864,817

Applicant(s)

CONSTANTINO ET AL.

Examiner

Rebecca A. Blanton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (JP 05330824) in view of Bruno (US 5082811).

Egami et al. teach a method of hydrothermally producing barium titanate particles by mixing a solution of barium hydroxide and hydrous titanium oxide and reacting the solution at a temperature of 100°C (abstract). Egami et al. do not teach coating the barium-titanate particle. Bruno teaches coating a ceramic powder, such as, barium titanate particles with metal oxides such as magnesium oxide (column 1 lines 18-39 and column 2 lines 53-65). Bruno also teaches that the coating process includes adding the metal coating particles to a slurry of the barium-titanate particles (column 4 lines 56-67). Bruno further teaches that the metal coating enhances the dielectric properties of the ceramic powders (column 2 lines 29-42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the barium-titanate particles taught by Egami et al. with the metal oxide coating taught by Bruno in order to enhance the dielectric properties of the barium-titanate particles.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (JP 05330824) in view of Bruno (US 5082811) as applied to claim 1 above, and further in view of Lilley et al. (US 4764493).

Egami et al. teach a method of hydrothermally producing barium-titanate particles, as described above. Bruno teaches coating barium-titanate particles with a metal oxide to enhance the dielectric properties, as described above. Neither reference teaches washing the particles before the coating process. Lilley et al. teaches forming barium-titanate particles using barium hydroxide and titanium dioxide (abstract). Lilley et al. teach washing the barium-titanate particles after they have been formed is necessary to remove excess barium hydroxide (column 4 lines 41-50). Lilley et al. further teach that the washing solution is removed after the particles have been washed (column 7 lines 2-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to wash the barium-titanate particles taught by Egami et al. after their formation to remove the impurities, as taught by Lilley et al.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (JP 05330824) in view of Bruno (US 5082811) as applied to claim 1 above, and further in view of Funk (US 5833361).

Egami et al. teach producing barium-titanate particles by using barium hydroxide and titanium oxide, as described above. Bruno teaches coating barium-titanate particles with a metal coating to improve the dielectric properties, as described above. However, neither reference teaches de-agglomerating the particles by high shear mixing. Funk teaches a high shear mixer that is used for deagglomerating ceramic

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particles, such as barium-titanate (column 1 lines 19-21, 28-30, and 44-45). Funk further discloses that most ceramic powders are severely agglomerated, and therefore must be subjected to deagglomeration through high shear mixing (column 1 lines 19-21, 44-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to deagglomerate the barium-titanate particles taught by Egami et al. after their formation using the high shear mixer taught by Funk to achieve the best deagglomeration.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 4898843 to Matsushita et al.: Matsushita et al. teach forming barium-titanate based particles using barium hydroxide mixed with a slurry of hydrous titanium oxide.


US 5112433 to Dawson et al.: Dawson et al. teach hydrothermally forming barium-titanate particles.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca A. Blanton whose telephone number is 703-605-4295. The examiner can normally be reached on M - F (8:00am - 4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


rab
November 19, 2001


SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700